Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Diagnosis and treatment of ischemic stroke: percentage of eligible patients receiving tPA according to guideline.

Source(s)

Anderson D, Larson D, Bluhm J, Charipar R, Fiscus L, Hanson M, Larson J, Rabinstein A, Wallace G, Zinkel A. Diagnosis and initial treatment of ischemic stroke. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2012 Jul. 122 p. [238 references]

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of eligible patients age 18 years and older initially presenting with acute symptoms of ischemic stroke who receive tissue plasminogen activator (tPA) according to guideline.

Rationale

The priority aim addressed by this measure is to increase the percentage of patients age 18 years and over receiving appropriate thrombolytic and appropriate antithrombotic therapy for ischemic stroke (tissue plasminogen activator [tPA] and aspirin, other antiplatelet agents, or an anticoagulant).

Stroke is the fourth leading cause of death, recently dropping from third after decades long efforts to reduce incidence by treatment of risk factors. It remains the leading cause of disability among adults. Costs of hospitalizations, other cares and lost wages are simply enormous.

Patients presenting to the emergency department soon after the onset of symptoms may be candidates for treatment with intravenous (IV) tPA and will therefore require a rapid evaluation and treatment initiation.

A qualified clinician (i.e., trained and experienced in acute stroke management or supported via telemedicine arrangement by such a clinician) should administer IV tPA to selected and qualifying patients with acute ischemic stroke within 4.5 hours of symptom onset or of time last known to be at their baselines in appropriate care circumstances (i.e., in a "stroke-ready" emergency department or hospital).

Stakes are high, impact of treatment is substantial, and evidence is strong for treatment of appropriately selected patients.

Evidence for Rationale

Albers GW, Amarenco P, Easton JD, Sacco RL, Teal P. Antithrombotic and thrombolytic therapy for ischemic stroke: the Seventh ACCP Conference on Antithrombotic and Thrombolytic Therapy. Chest. 2004 Sep;126(3 Suppl):483S-512S. [202 references] PubMed

Anderson D, Larson D, Bluhm J, Charipar R, Fiscus L, Hanson M, Larson J, Rabinstein A, Wallace G, Zinkel A. Diagnosis and initial treatment of ischemic stroke. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2012 Jul. 122 p. [238 references]

Carpenter CR, Keim SM, Milne WK, Meurer WJ, Barsan WG, Best Evidence in Emergency Medicine Investigator Group. Thrombolytic therapy for acute ischemic stroke beyond three hours. J Emerg Med. 2011 Jan;40(1):82-92. PubMed

Clark WM, Wissman S, Albers GW, Jhamandas JH, Madden KP, Hamilton S. Recombinant tissue-type plasminogen activator (Alteplase) for ischemic stroke 3 to 5 hours after symptom onset. The ATLANTIS Study: a randomized controlled trial. Alteplase Thrombolysis for Acute Noninterventional Therapy in Ischemic Stroke. JAMA. 1999 Dec 1;282(21):2019-26. PubMed

Hacke W, Kaste M, Bluhmki E, Brozman M, Davalos A, Guidetti D, Larrue V, Lees KR, Medeghri Z, Machnig T, Schneider D, von Kummer R, Wahlgren N, Toni D, ECASS Investigators. Thrombolysis with alteplase 3 to 4.5 hours after acute ischemic stroke. N Engl J Med. 2008 Sep 25;359(13):1317-29. PubMed

Hacke W, Kaste M, Fieschi C, Toni D, Lesaffre E, von Kummer R, Boysen G, Bluhmki E, Hoxter G, Mahagne MH, et al. Intravenous thrombolysis with recombinant tissue plasminogen activator for acute hemispheric stroke. The European Cooperative Acute Stroke Study (ECASS). JAMA. 1995 Oct 4;274(13):1017-25. PubMed

Hacke W, Kaste M, Fieschi C, von Kummer R, Davalos A, Meier D, Larrue V, Bluhmki E, Davis S, Donnan G, Schneider D, Diez-Tejedor E, Trouillas P. Randomised double-blind placebo-controlled trial of thrombolytic therapy with intravenous alteplase in acute ischaemic stroke (ECASS II). Second European-Australasian Acute Stroke Study Investigators. Lancet. 1998 Oct 17;352(9136):1245-51. PubMed

Lansberg MG, Bluhmki E, Thijs VN. Efficacy and safety of tissue plasminogen activator 3 to 4.5 hours after acute ischemic stroke: a metaanalysis. Stroke. 2009 Jul;40(7):2438-41. PubMed

Lees KR, Bluhmki E, von Kummer R, Brott TG, Toni D, Grotta JC, Albers GW, Kaste M, Marler JR, Hamilton SA, Tilley BC, Davis SM, Donnan GA, Hacke W, ECASS, ATLANTIS, NINDS and EPITHET rt-PA Study Group, Allen K, Mau J, Meier D, del Zoppo G, De Silva DA, Butcher KS, Parsons MW, Barber PA, Levi C, Bladin C, Byrnes G. Time to treatment with intravenous alteplase and outcome in stroke: an updated pooled analysis of ECASS, ATLANTIS, NINDS, and EPITHET trials. Lancet. 2010 May

15;375(9727):1695-703. PubMed

Tissue plasminogen activator for acute ischemic stroke. The National Institute of Neurological Disorders and Stroke rt-PA Stroke Study Group. N Engl J Med. 1995 Dec 14;333(24):1581-7. PubMed

Wahlgren N, Ahmed N, Davalos A, Ford GA, Grond M, Hacke W, Hennerici MG, Kaste M, Kuelkens S, Larrue V, Lees KR, Roine RO, Soinne L, Toni D, Vanhooren G, SITS-MOST investigators. Thrombolysis with alteplase for acute ischaemic stroke in the Safe Implementation of Thrombolysis in Stroke-Monitoring Study (SITS-MOST): an observational study. Lancet. 2007 Jan 27;369(9558):275-82. PubMed

Primary Health Components

Ischemic stroke; thrombolytic therapy; tissue plasminogen activator (tPA)

Denominator Description

Number of patients eligible for tissue plasminogen activator (tPA) treatment and treated with tPA (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Number of patients who were treated with tissue plasminogen activator (tPA) according to guideline (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

Unspecified

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Emergency Department

Hospital Inpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

The time frame pertaining to data collection is monthly.

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Encounter

Patient/Individual (Consumer) Characteristic

Therapeutic Intervention

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
Number of patients eligible for tissue plasminogen activator (tPA) treatment and treated with tPA

Population Definition: Patients age 18 years and older initially presenting with acute symptoms of ischemic stroke who are eligible for tPA.

Exclusions
Unspecified

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
Number of patients who were treated with tissue plasminogen activator (tPA) according to guideline

Exclusions
Unspecified

Numerator Search Strategy

Fixed time period or point in time

Data Source

Paper medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Percentage of eligible patients receiving tPA according to guideline.

Measure Collection Name

Diagnosis and Treatment of Ischemic Stroke

Submitter

Institute for Clinical Systems Improvement - Nonprofit Organization

Developer

Institute for Clinical Systems Improvement - Nonprofit Organization

Funding Source(s)

The Institute for Clinical Systems Improvement's (ICSI's) work is funded by the annual dues of the member medical groups and five sponsoring health plans in Minnesota and Wisconsin.

Composition of the Group that Developed the Measure

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Financial Disclosures/Other Potential Conflicts of Interest

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Guideline-Related Activities: None
Research Grants: None
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Financial/Non-Financial Conflicts of Interest: None

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Research Grants: None
Financial/Non-Financial Conflicts of Interest: None

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Research Grants: None
Financial/Non-Financial Conflicts of Interest: Clinical Advisory Panel Leader, TogetherMD, LLC, MN Acute Stroke Systems Council, MDH and member of MN Time Critical Care Committee, MDH

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Guideline-Related Activities: None
Research Grants: None
Financial/Non-Financial Conflicts of Interest: None

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Guideline-Related Activities: None
Research Grants: Cardionet, MCOT use for an investigator-initiated project
Financial/Non-Financial Conflicts of Interest: Member of the Data Safety Monitoring Board for the PREVAIL study by ARTITECH (now Boston Scientific)

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Guideline-Related Activities: None
Research Grants: None
Financial/Non-Financial Conflicts of Interest: None

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National, Regional, Local Committee Affiliations: None
Guideline-Related Activities: None
Research Grants: None
Financial/Non-Financial Conflicts of Interest: Clinical Advisory Panel Leader, TogetherMD, LLC

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2012 Jul

Measure Maintenance

Scientific documents are revised every 12 to 24 months as indicated by changes in clinical practice and literature.

Date of Next Anticipated Revision

The next scheduled revision will occur within 24 months.

Measure Status

This is the current release of the measure.

The measure developer reaffirmed the currency of this measure in January 2016.

Measure Availability

Source available from the Institute for Clinical Systems Improvement (ICSI) Web site .

For more information, contact ICSI at 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; Phone: 952-814-7060; Fax: 952-858-9675; Web site: www.icsi.org ; E-mail: icsi.info@icsi.org.

NQMC Status

This NQMC summary was completed by ECRI Institute on November 14, 2012.

The information was reaffirmed by the measure developer on January 13, 2016.

Copyright Statement

Production

Source(s)

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